

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated in the following recitation of pending claims.

1. – 28. (Cancelled)

29. (Previously presented) The method of claim 40, wherein the plurality of lines form a grid on the surface of the object.

30. (Previously presented) The method of claim 40, further comprising the step of illuminating the surface of the object with visible light at a second wavelength, the second wavelength being different from the first wavelength.

31. (Previously presented) The method of claim 30, wherein the image-capturing step includes capturing a second image of the surface illuminated by the visible light at a second wavelength, and wherein the method further comprises the step of determining two-dimensional information for any surface structures by analyzing the second image.

32. (Previously presented) The method of claim 31, wherein the image capturing step is performed by a camera operable to capture separate images corresponding to light of the first wavelength and of the second wavelength.

33. (Currently amended) The method of claim ~~32~~ 31, wherein the visible light at a second wavelength is emitted by a visible light source that is strobed at a second predetermined exposure time.

34. (Previously presented) The method of claim 33, where in the predetermined exposure time for the coherent light source and the second predetermined exposure time for the visible light source are different.

35. (Previously presented) The method of claim 32, further comprising the steps of illuminating the surface with visible light at a third wavelength, the third wavelength being different from the first and second wavelength, wherein the image capturing step includes capturing a third image created by the visible light at the third wavelength, and determining two-dimensional information for any surface by analyzing the third image.

36. (Previously presented) The method of claim 35, wherein the two-dimensional information from the second image is combined with the two-dimensional information from the third image to create refined two-dimensional information.

37. (Previously presented) The method of claim 36, wherein the refined two-dimensional information is combined with the height information to create a profile of structures on the surface of the object.

38. (Previously presented) The method of claim 31, wherein the two-dimensional information is combined with the height information to create a profile of structures on the surface of the object

39. (Previously presented) The method of claim 40, wherein the height information is determined by integrating a series of height measurements to provide an average height.

40. (Currently amended) A method of inspecting a structure-bearing surface of an object, said method comprising the steps of:
simultaneously forming a plurality of lines ~~in a regularly spaced relationship~~ on the surface using light emitted from a at least one coherent light source at a first wavelength and strobed at a pre-determined exposure time, ~~the exposure time being a function of the spacing between the individual lines of the plurality of lines;~~
moving the lines with respect to the surface;
capturing an image of the lines as they move with respect to the surface; and
determining height information for structures on the surface from the image of the lines.

41. (Cancelled) ~~The method of claim 40, wherein the exposure time is also a function of the speed at which the lines move with respect to the surface.~~

42. (New) An optical inspection system for inspecting a structure-bearing surface of an object, said system comprising:
at least one coherent light source that simultaneously illuminates the surface of the object with a plurality of lines, said at least one coherent light source being mounted such that the plurality of lines created by the at least one coherent light source can be moved over an area of interest on the surface of the object;
a camera movably mounted above the surface such that the camera may be moved to capture an image of the lines as they move with respect to the surface being inspected;
wherein the at least one coherent light source is strobed at a first predetermined exposure time, thereby controlling exposure time of the camera to the illumination created by the at least one coherent light source; and
a computer that determines structure height information for the structure from the captured image of the first line.

43. (New) The system of claim 42, wherein the plurality of lines form a grid on the surface of the object.

44. (New) The system of claim 42, further comprising a first visible light source for illuminating the surface of the object, wherein the camera captures a first image of the surface when it is illuminated by the first visible light source and the computer determines two-dimensional structure information from the first image.

45. (New) The system of claim 42, wherein the first visible light source is operable to strobe at a second predetermined exposure time, thereby controlling the exposure time of the camera to illumination from the first visible light source.

46. (New) The system of claim 42, wherein the at least one coherent light source emits light at a first wavelength and the first visible light source emits light at a second wavelength that is different from the first wavelength.

47. (New) A method of inspecting a structure-bearing surface of an object, said method comprising the steps of:

forming at least one line on the surface using light emitted from a coherent light source at a first wavelength and strobed at a pre-determined exposure time;
moving the line with respect to the surface;
capturing an image of the line as it moves with respect to the surface; and
determining height information for structures on the surface from the image of the line.

48. (New) The method of claim 47, further comprising the step of illuminating the surface of the object with visible light at a second wavelength, the second wavelength being different from the first wavelength.

49. (New) The method of claim 48, wherein the visible light at a second wavelength is emitted by a visible light source that is strobed at a second predetermined exposure time.

50. (New) The method of claim 49, where in the predetermined exposure time for the coherent light source and the second predetermined exposure time for the visible light source are different.